

Bowditch (H. I.)

REPORT

OF THE

COMMITTEE ON CLIMATOLOGY AND EPIDEMICS IN
MASSACHUSETTS, 1868-9.

BY

HENRY I. BOWDITCH, M. D.

EXTRACTED FROM THE
TRANSACTIONS OF THE AMERICAN MEDICAL ASSOCIATION.



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REPORT OF THE COMMITTEE ON CLIMATOLOGY AND EPIDEMICS IN MASSACHUSETTS, 1868-9.¹

THE undersigned, immediately after being informed by the Secretary, that he had been appointed a Committee on the above-named subject, sent letters to the secretaries of the several District Societies (17 in number) into which the Massachusetts Medical Society is divided, requesting reports from their several districts. It was hoped that by this method more accurate returns would be procured, than by any other course. The undersigned regrets that his success has been very imperfect, as will be seen by the papers hereunto annexed. Only four of the seventeen districts have responded. Moreover the documents from these four have evidently not been presented as complete and exhaustive of the subject proposed. They are, however, valuable as giving the experience of intelligent practitioners of medicine, some resident on the coast, and others, for many years, actively employed in the various localities treated of. The report from Suffolk Co., prepared by the undersigned, with the assistance of the City Registrar Mr. Appolonio, is of the same character with the others.

In looking at these various reports, it may be stated generally that, during the past year no very severe and fatal epidemic has swept over Massachusetts. Although scarlatina has been very rife in Middlesex and Suffolk, and perhaps other counties since the autumn, it still exists in Suffolk, but of a very mild type.

Epidemic influenza has been generally prevalent during the past winter, which has been very open, with much less snow than usual, and not unfrequently rain, which during our northern winters, is an unusual occurrence.

The following extract from a letter from the city registrar of Boston, confirms the above statements, while at the same time it

¹ Received too late for action by the section, but published with the suggestion of the secretary of the section.

shows the mortality observed from several of the more important diseases.

"On looking over my table of last year's mortality, I do not discover the prevalence of any particular disease, or that any one locality suffers more than the same locality suffered in previous years. Maladies regarded as contagious appear in about the same proportions as in former years. I give a list from a few of the more prominent causes of death during the past year.

Consumption	868
Pneumonia	358
Other lung diseases	86
Scarlet fever	267
Croup	127
Diphtheria	67
Typhoid fever	120
Cholera infantum	488
Dysentery	113
Diarrhoea	101
Total number of deaths during 1868	5419
Population in 1867	205,000"

The undersigned is painfully aware of the very imperfect character of this report; while preparing it, the question has arisen whether a better result could not be obtained if a material modification was made by the Association, in the organization and operations of any future National Committee on Climatology and Epidemics. Though several valuable papers, some of them very elaborately written, have been presented by individual members of the various National Committees on this subject during past years, there has been no *national labor*, so to speak, ever performed or even attempted. It would be hard to get any clear idea embracing *the whole country*, from these various reports scattered through past volumes of our *Transactions*. Everything in them of value is necessarily local, and for each State or part of a State. It would seem that such work should belong more appropriately to the various State Associations. The American Medical Association should endeavor to take wider views, and should study climatology and epidemics over the larger area covered by the nation. We have the fairest opportunity for these studies, as our wide country embraces within its limits the colder regions of the north, and the more genial, sunny climes of the south. The effects of an ice-cold atmosphere, and of an almost tropical heat, with all their intermediate shades of temperature, and the varied influences of the

Atlantic and Pacific Ocean climates, with that also of our vast Mississippi Valley, could be studied by this Association by an appropriately appointed committee. Such a national committee should be a unit, and could take views of questions in their bearings upon the whole Union. No such committee has ever existed, and such a plan has never been attempted, and moreover it never can be attempted under the present cumbrous arrangements of annually choosing one man from each State, and allowing him to choose his own questions, and to follow his own method of investigation. There is now an immense amount of wasted brain-work, and of actual manual labor in preparing what are really only local and special topographical and climatological reports. This is certainly unfortunate for the Committee and for this Association.

Whether any better plan can be devised it is impossible for the undersigned to say, although he may have a decided opinion on that question. It is always much easier to criticize a plan actually in operation, the defects of which come distinctly out to view under the various difficulties it has to encounter, than to present another and a better method.

One or two hints, however, may be thrown out, which, if good in themselves and agreeable to the wishes of the Association, may help to solve the question whether any change should be made.

First. It is suggested that a *Central* National Committee on Climatology and Epidemics should be chosen, small in number, and the members of which should be resident in one of our large cities, or in its immediate vicinity. Such committee might consist of five members, who should be men interested in the subject, and would agree to hold office and to work during a certain number of years, then to give way to another committee resident near another city, or if the association thought best it could continue in office for a second period of service.

Second. This committee should be appointed by the president for the time being, as he would be able to decide by correspondence, and otherwise, the best men to be selected. If, during their period of service any members should resign or die, the remaining members should be allowed to fill vacancies. If desirable, one member of the committee might, by rule, leave each year, but the president might reappoint any one who might be thought too valuable a man to be lost to the committee. In this way the committee, while gaining annually perhaps new vigor, would have a degree of permanency requisite for continuing long investigations.

Third. This committee should hold regular or special meetings, and keep records thereof, abstracts of which might be presented each year to this body. It should as soon as possible after the annual meetings of this Association, prepare plans for investigating diseases and their relative prevalence; their causes, etc., throughout the Union. For that purpose they should send a few questions at a time, and should by all possible means procure some answer from every State. How this should be done should be left to the committee to decide; but no full report should be made until answers were obtained from all quarters, even if it should take years to procure them.

The topographical distribution of disease could be studied with great advantage by such a plan judiciously carried out. An answer each year to a *single question* from the whole expanse of the country, would be worth all the individual State Reports heretofore made, or any future report to be given under our present plan. For example, it would not only be very interesting, but a most important question in reference to public health, to learn whether the law that *residence on a moist soil is a cause of phthisis* (which years ago was proved to exist in New England, and which still more recently has been proved to hold good in Old England), prevails in this country, from Eastport to the Rio Grande, and from the Atlantic to the Pacific.

One, or perhaps two questions, issued by such a National Committee as is suggested, and answers obtained by real labor on the part of the Committee could settle this important point not only for America, but in all probability for the civilized world.

And this is only one question, hundreds of others could be prepared, and if thorough reports were made from answers returned from all quarters of our country, we could, by means of the vast machinery of this Association, elucidate many questions relative to public hygiene, and to diseases which under our present method will never be solved.

In order to bring this subject fairly before the Association, a resolution is appended and offered for the consideration of the meeting.

Respectfully submitted by

HENRY I. BOWDITCH.

Resolved, That —— be a committee to consider and report at the next annual meeting whether any better plan can be devised for the constitution and labors of the Committee on Climatology and Epidemics of the American Medical Association.

REPORT (A) FROM THE BARNSTABLE DISTRICT MEDICAL SOCIETY.

BY DR. DOANE, of Hyannis.

As one of the Committee appointed by the Barnstable District Medical Society, on Climatology and Epidemics in that district, I would make the following report:—

1. CLIMATOLOGY.—That the Cape, or that part of it as far down as Chatham and Orleans, varies greatly in soil and climate, between the north and south sides. On the north side, the soil is almost wholly more clayey and heavy, and better calculated for cultivation than the south side; and the winters five degrees, if not more, colder, from the prevailing winds of the bay, blowing directly upon the place. In the summer the opposite prevails; and the south side is much cooler, from the prevalence of S. W. winds directly from the sound; so that, in respect to temperature, the climate is much milder in winter and cooler in summer on the south side. Woods of about four miles in width extend the whole length between the north and south sides of the Cape, preventing the cold and heat from being carried readily across. On the south side the soil is sandy and beachy, and after going below Orleans, the remaining towns are the same throughout their whole extent, so much so, that twenty-four hours after a heavy rain but little standing water will remain. Here another peculiarity of climate shows itself, in the greater prevalence of fogs, especially in the spring and early summer, on the south side, which are prevented from reaching the north side by the dense woods. In a twenty-five years' residence here, I have observed these peculiarities, but of their effects upon disease we have no statistics to show, although I have not observed any more consumption in proportion to number of inhabitants on the north than on the south side of the Cape; the soil moisture of the north side being, perhaps, counterbalanced by the increased amount of fogs on the south side. There are many clear, sandy-bottom ponds on the Cape, and not many bogs and

swamps, especially since many of them have been drained, and turned into cranberry meadows; and the water is of the purest quality generally, so that as far as miasmatic influences are concerned it is the paradise of Massachusetts. The great prevalence of damp east winds, and sudden changes of temperature which prevail, predispose to the various forms of rheumatism, neuralgia, and inflammatory affections of the lungs. In the winter, we never get those low temperatures, of twenty and more below zero, that prevail in Boston, and interior towns of the State. The lowest temperature ever noted here since my residence, is five below zero, and it seldom reaches zero during our coldest weather. The last year has been an uncommonly damp season; mould forming in houses in very dry localities, and during no time of the year could there be said to be a drouth. The winter has been very mild, with but very little snow.

2. EPIDEMICS.—In respect to epidemic diseases in the district, during the year, but very little can be said. Some mild epidemics of scarlet fever, measles, hooping-cough, influenza, and mumps have prevailed. To show the healthy state, especially among children, I would say that in my own place (Hyannis), with about 2500 inhabitants, only three children, under ten years of age, have died during the year, and none of them of epidemic diseases; and this is about a fair sample of the other places in the district. In respect to fevers, there have been scarcely any typhoid, and other diseases have not assumed a typhoid form, but have been more gastric and inflammatory in their character.

GEORGE W. DOANE.

HYANNIS, MASS.

REPORT (B) FROM THE BARNSTABLE DISTRICT MEDICAL SOCIETY.

By Dr. STONE, of Wellfleet.

1. CLIMATOLOGY.—The climatology of Cape Cod is like that of the eastern slope of New England, characterized by sudden changes, damp, cold east winds, predisposing to congestion and inflammation of respiratory organs. I do not think acute inflammation is so prevalent as formerly, but chronic affection of the lungs, founded in that atony of the system we call scrofula, is the cause of nearly half our mortality. The deterioration of mothers is very marked in our vicinity, the bent form, the "all-gone" expression, that betokens

disease of the uterus or its appendages, give a melancholy prospect for hardy posterity.

2. EPIDEMICS.—Our vicinity has been almost entirely free from any epidemic the last year. There has not been much typhoid fever, diarrhoea, or dysentery. There has been an epidemic influenza during the last two months, not very severe, still, long and troublesome.

T. N. STONE.

WELLFLEET, MASS.

REPORT FROM THE MIDDLESEX SOUTH DISTRICT SOCIETY.

By Dr. VAUGHAN, of Cambridge.

DR. H. I. BOWDITCH.

DEAR SIR:—The few suggestions following embrace all that I have been able to collect, which seems to bear directly upon the subject of your report.

The older practitioners of the Middlesex South District agree that the district has been very free from epidemics of exceptional importance within their recollection; the malignant dysentery of 1847–8 being almost the sole exception. This, again, was a repetition of the epidemic of 1817. A full account of it is contained in a paper by Dr. Morrill Wyman, in the *Transactions of the American Medical Association*, Vol. II.

It appeared in old Cambridge in July, 1847, reached its height in the early part of September, and disappeared on the approach of winter. In 1848, it reappeared, and ran a similar course, but with less violence in old Cambridge, but was very fatal in Cambridgeport and Brighton. It also visited other parts of New England, both inland and upon the seaboard, being more fatal in the less crowded towns, than in the large cities. No cause could be traced in the water, food, or other influences. Carthartics, emetics, local and general bleeding were of no avail. Opium was tolerated in very large quantities, and proved the main dependence.

Within the past ten years, epidemics have been neither violent nor of wide range, not even excepting that of variola in 1858–9, which on the whole was more alarming than malignant, although a number of fatal cases occurred in this vicinity.

In 1861–2, an epidemic of rubeola created a panic, which nearly emptied our public school-houses, and spread into the neighboring towns, but the number of fatal cases was not large.

In 1864, a considerable number of cases of diphtheria occurred, but not enough to warrant the title of epidemic.

In 1865, a slight epidemic of rubeola.

In 1865-6, scarlatina and dysentery, the former pervading in that year and the next, nearly the whole district. The dysentery was not wide spread nor generally malignant, but some cases occurred in Cambridge, of a fatal character, which brought to mind the malarial dysentery of the south and southwest.

In 1868-9, the present year, an exceptional epidemic of influenza, so called, has visited the whole district, as well as other parts of New England.

Scarlatina and rubeola, have prevailed in the district. In Cambridge, the former has hitherto greatly predominated. In other towns, rubeola has taken the lead, as in Newton, Waltham, etc. At present in Cambridge, scarlatina is abating, and rubeola taking its place; elsewhere the reverse obtains. They have not been characterized by any thing peculiar, excepting that cases are often complicated by the prevailing influenza.

The last named epidemic disease deserves a little fuller notice. It has been more remarkable, perhaps, for its extensive range, the large proportion of the population attacked, and its obstinacy under treatment, than for any exceptional violence; an exception to this may be made in the case of young children.

Like other epidemics, it has taken a sthenic or asthenic form, according to the constitutional condition of the subject. In those beyond middle life, especially women in delicate health, entire recovery has often been postponed for six, eight, or ten weeks, and an irritable congested state of the fauces has in some instances remained for a longer time.

As to locality, it made its first appearance in Cambridge in a part of the town which, although inhabited by the better class of the population, is in the vicinity of the lowest land, where the drainage is deficient, and the sandy layer is thin and approaches the clay. No part of the town has been exempt. I have seen some of the worst cases in the healthiest and best drained parts of the town.

With regard to its phenomena, it justifies in general the name which Flint applies to the disease, viz., epidemic bronchitis, although the whole mucous tract is effected, more or less, from the frontal sinuses, to the smaller ramifications of the bronchia, its force being expended upon different parts, according to individual peculiarities.

In some cases, the conjunctivæ, and sometimes the lachrymal ducts have been especially affected. In a very large proportion of cases, the pharynx has suffered the most severely.

It generally begins like other febrile diseases, with a chill, followed by pyrexia. Sometimes, however, the first symptoms noticed have been in the pharynx, and trachea. In my own case, I felt first an uneasy sensation of dryness below the larynx, which increased in spite of treatment. There were absolutely no constitutional symptoms until the end of the third day. The subjective symptoms do not differ generally from those of other epidemics, including debility, languor, anorexia, with furred tongue, thirst, headache, pains in the back and limbs, soreness of throat and sternal region, cough, with muco-purulent expectoration, etc.

The physical signs in the thorax, are those of bronchitis; mucous râles on both sides, etc. There is an appearance in the back part of the pharynx in well-marked cases, which is somewhat peculiar, suggesting the idea of a charge of small shot under the membrane. It is doubtless caused by the distended mucous follicles, although the papules are smaller than those we usually notice in follicular pharyngitis, possibly because we usually see them in a more chronic state of enlargement.

The average duration of the acute stage is a week or ten days, but in many cases much more, and convalescence is sometimes indefinitely prolonged.

In young children, the disease often takes a violent and sometimes an alarming form. The child is prostrated at once, and the subjective phenomena are those of acute pneumonia. The absence of dulness and other signs of affection of the substance of the lung and the symmetrical development of mucous râles alone point out the nature of the attack. In some cases, the vital heat has risen very considerably, as indicated by the therinometer.

I am not aware that there have been any fatal cases of the disease.

Respectfully your obdt. servant,
CHAS. E. VAUGHAN.

CAMBRIDGE, April 14, 1869.

REPORT FROM THE MIDDLESEX NORTH DISTRICT SOCIETY.
BY DR. GILMAN, OF LOWELL.

LOWELL, MASS., April 14, 1869.

SIR: In accordance with your request, I herewith submit a brief report on the Climatology and Epidemics of this city for the year 1868.

Lowell has a population of 39,000 or 40,000 inhabitants, and is mostly built upon a sandy plain, at the confluence of the Concord river with the Merrimac. The central part of the city is intersected by canals, that furnish the motive power to the several manufacturing corporations, near which are located the boarding-houses and residences of the operatives employed in these establishments. This portion of the city is well drained and policed, with the exception of a few streets occupied by the poor Irish. The rising ground on the outskirts is occupied by the dwellings of the well-to-do citizens.

The total number of deaths during the year was 857, which would indicate a very unhealthy year, there being 217 more than in the preceding year, and, with one exception, more than ever before. No fatal epidemic or contagion has prevailed to any extent, except scarlet fever; this disease was unusually prevalent, and of a malignant character. There were 95 fatal cases, 80 more than last year, and the largest number ever reported. No reason can be assigned for this great increase of mortality. It was not confined to any particular locality nor class of society, but seemed to be about equally fatal in all. Two fatal cases of cholera occurred among the Irish, though they lived in separate sections of the city. I know nothing of the history of either case. Epidemic catarrh prevailed extensively in December, 1868, and in January, 1869, though there were no fatal cases. Consumption, as usual, is the most fatal disease, numbering 156, about one-fifth of all the deaths in the year, and the greatest number since 1859. Deaths from this disease are distributed quite equally through every month in the year, which is not unusual here. Comparatively, the greatest number of deaths from consumption occurred in the Irish sections of the city. Inflammation of the lungs numbered 42 deaths, six more than the year before, and more than the average. Cholera infantum numbered 44 deaths, a larger number than the average for the last ten years. These occurred almost wholly in July and August. Typhoid fever numbered 26 deaths, one less

than last year, but more than the average number. These deaths took place in nearly every month of the year.

Subjoined please find a meteorological table for the year; also a table giving the number of deaths from some of the most prevalent diseases during the year, compared with former years.

Respectfully submitted.

JOHN H. GILMAN.

Meteorological Table.

1868.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Mean temperature [Fahr.] at 6½ o'clock A.M. for each month of the year	16°	10°	25°	34°	47°	59°	67°	63°	53°	39°	29°	18°
Mean temperature [Fahr.] at 2 o'clock P.M. for each month of the year	29	29	42	50	60	76	84	79	68	55	40	30
Depth of rain and melted snow for each month of the year [in inches].....	3.51	1.21	3.35	5.57	9.03	4.45	0.86	2.84	11.63	0.96	4.69	1.45

Number of Deaths from some of the most Prevalent Diseases in the last ten years, and total number from all causes.

Diseases or causes of death.	1859.	1860.	1861.	1862.	1863.	1864.	1865.	1866.	1867.	1868. Tot'l
Dropsy of brain.....	32	31	14	17	17	15	19	25	34	9 213
Cholera infantum.....	38	39	49	31	20	31	50	32	35	44 369
Consumption.....	176	154	150	141	143	153	123	128	146	156 1470
Croup.....	24	24	31	22	26	12	12	20	14	14 199
Disease of heart.....	22	22	24	22	15	8	15	24	13	32 197
Dysentery	26	9	10	3	10	11	13	21	4	17 124
Infantile.....	59	43	40	39	29	27	28	21	23	44 353
Inflammation of lungs..	38	54	31	21	43	37	24	25	34	42 349
Marasmus	7	19	12	13	7	7	14	6	3	8 96
Scarlet fever.....	46	11	14	53	85	17	26	2	15	95 364
Typhoid fever.....	15	11	28	16	16	17	17	23	27	26 196
Diphtheria	1	15	39	34	7	18	11	3 128
Total number of deaths from all causes.....	739	720	713	641	695	633	575	749	640	857 6962

REPORT FROM THE WORCESTER NORTH DISTRICT SOCIETY.

By Dr. COLONY, FITCHBURG.

FITCHBURG, April 13, 1869.

DEAR SIR: Dr. C. C. Field, of Leominster, reports the prevalence, during the past year, in that town and vicinity, of an influenza, characterized by marked bilious complication, and terminating usually, in a short time, with a complete disappearance of all symptoms of bronchial inflammation.

In Fitchburg, and this locality, we have to report as prevalent, to an unprecedented extent, during the spring, epidemic rubecola. Many hundred cases occurred, and no insignificant proportion of them were complicated with severe bronchial inflammation and congestion, terminating fatally in quite a number of instances. At the same time, and subsequently, roseola prevailed to a considerable extent. Scarlatina, in a mild form, has prevailed during the fall and winter, but, so far as I am aware, without a fatal result.

The influenza alluded to by Dr. Field, of Leominster, as prevalent there, has also been observed in the vicinity of Fitchburg. Many severe, and several fatal cases, having occurred within our limits. Severe anginose diseases have been observed, more especially during the winter months.

During the summer months, cholera infantum was more prevalent, and more fatal than has been observed for several years. It was especially observable that an increase of the disease took place immediately after a few days of extreme heat.

I am not aware that typhoid or gastro-enteric fevers have been any more prevalent than usual, and should say that less of such a character had been observed than an average.

I am yours respectfully,

GEO. D. COLONY,

Secretary of the Worcester North District Medical Society.

